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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,303	06/28/2004	Toshinasa Sakayori	042471	9869

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EXAMINER

TADESSE, YEWEBDAR T

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/500,303

Applicant(s)

SAKAYORI ET AL.

Examiner

Yewebdar T. Tadesse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 062804.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. Claims 2 and 5 are objected to because of the following informalities: in claim 2, on lines 2-3, the phrase "for applying a material to a surface to be applied of a workpiece disposed on a base" appears to be grammatically incorrect. For the purpose of examination, "for applying a material to a surface of a workpiece disposed on a base" is assumed. In claims 2 and 5; lines 11 and 3 respectively, the phrase "the periphery direction" is grammatically incorrect. For the purpose of examination, "the peripheral direction" is assumed. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 1, 3-4 and 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 3 "said surface has no antecedent basis. For the purpose of examination "a surface" is assumed and the phrase "a surface" on line 4 is replaced by "said surface".

In claim 1, lines 8-9, applicants claim that the bead having a sectional configuration in which " the height is larger than 0.9 compared to the width of 1". Firstly, if the height of the bead is required to be larger than the width of the bead (as taught in

Spec page 14, lines 13-14 and Fig 4), these numbers should be in reverse order. In comparing these sizes, the height of 1 should be larger than the width of 0.9.

Additionally, the claimed language with sizes of the bead is unclear because the units of these numbers are not included. For the purpose of examination, " the height (1mm) is larger than the width of 0.9 mm" is assumed (see applicants' specification on page 14, lines 15-23 for the height and width of the bead in mm).

In claim 1, lines 6-9, it is also unclear whether the material discharged or the discharge port is capable of forming a bead having a sectional configuration. For the purpose of examination " said discharge port is formed into a non-circular configuration, discharges said material and capable of forming a bead having a sectional configuration ..." is assumed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 5, 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitamura et al (US 6,139,639).

With respect to claim 1, Kitamura et al discloses (see Abstract, Figs 1-3, columns 7-8, starting line 61) a material application apparatus that applies a material from a discharge port of the nozzle along a predetermined movement track on the surface

while performing relative displacement of a surface of workpiece disposed on a base and a nozzle with respect to each other (a coating machine with lifting mechanism 26 and servomotor 18 for relatively moving the die 40 and the substrate on a table respectively to produce coating within a predetermined coating area), wherein the discharge port is formed into a non-circular configuration (rear lip 60 shaped into a downward slope 72 inclined towards the outlet 66) and capable of forming bead having a sectional configuration in which the height (1mm) is larger than the width of 0.9 mm. It is well known in the art in the application of viscous materials onto a substrate with a die or nozzle that the height and width of a bead dispensed from the nozzle depend on the types of the shim used. For instance – Hadzimihalis et al (US 4,844,004) teaches (see column 3, lines 15-28, Fig 3, claim 7) that the height and width of the beads of material dispensed from the nozzle may be easily varied by simply changing from one shim to another. Kitamura et al teaches the use of shim to adjust the gap of the slot (see column 13, lines 23-28, by adjusting the gap with different type of shims, different sizes of bead can be dispensed). As such Kitamura et al's applicator or die is capable of forming beads having a sectional configuration in which the height (1mm) is larger than the width of 0.9 mm by exchanging different shims.

As to claim 2, Kitamura et al discloses (see Abstract, Figs 1-3, columns 7-8, starting line 61) a material application apparatus for applying a material to a surface of a workpiece disposed on a base and a movement means for relatively moving the application means along a predetermined movement track on the surface so as to apply the material into a bead configuration (a coating machine with lifting mechanism 26 and

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servomotor 18 for relatively moving the die 40 and the substrate on a table respectively to produce the material into a bead configuration). Furthermore, Kitamura et al discloses (see Fig 1) an application means (coating machine) including a syringe (syringe pump 44), a nozzle (die 40) connected to the syringe (syringe pump 44), and a nozzle (die 40) adapted to rotate (see column 8, lines 22-24 and column 12, lines 45-51 for actuators rotating die) in the peripheral direction (a driving mechanism positioning the substrate in the desired area including peripheral edge of the substrate, see columns 7-8, starting line 61) while the syringe is not rotated in the peripheral direction thereof.

Regarding claim 5, in Kitamura (see Fig 2) the nozzle is rotatable in the peripheral direction (desired area) by a motor provided with an output shaft (guide rods within a casing 28) positioned parallel to the nozzle (40) and by a drive force transmission member (die holder 32).

As to claim 8, Kitamura et al's device is capable of using material having a viscosity of 10000 cP-400000 cP in degree of viscosity, and to 4-10 in thixo-index.

Regarding claim 10, Kitamura discloses (see Fig 3 and column 14, lines 20-30) the space distance between the discharge port and the surface is set to around 1.2-10 (overlapping the claimed gap of 1.5-3) times as the coating thickness (height of the bead).

6. Claims 1 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Dominguez (US 4,964,362).

With respect to claim 1, Dominguez discloses (see Figs 1, 3 and 6) a material application apparatus that applies a material from a discharge port of the nozzle along a predetermined movement track on the surface while performing relative displacement of a surface of workpiece disposed on a base and a nozzle with respect to each other (applicator for glass adhesives and sealants having nozzles (42,52) with discharge ports, a robot 10 for moving the nozzles and a positioning mechanism 19 for moving the substrate, in which the nozzles and the substrate move with respect to each other to apply coating having desired shape of adhesive bead), wherein the discharge port is formed into a non-circular configuration (the discharge opening 63 having trapezoidal shape) and capable of forming bead having a sectional configuration in which the height (1mm) is larger than the width of 0.9 mm. As shown in Fig 3, the shape of the adhesive bead 16 appears to have a height larger than the width of the bead. Dominguez also teaches (see column 1, lines 54-58 and column 3, lines 45-54) that the spacing of the two nozzles is closely controlled in applying the desired shape of the adhesive bead. Therefore, Dominguez device is capable of forming beads having beads sizes as claimed by closely controlling the spacing of the nozzles.

As to claim 8, Dominguez's device is capable of using material having a viscosity of 10000 cP-400000 cP in degree of viscosity, and to 4-10 in thixo-index.

With respect to claim 9, in Dominguez (see Fig 1 and column 4, lines 15-18) the computer 32 adjusts the speed of the nozzle and the substrate with respect to each other so that the bead shape will remain uniform.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dominguez (US 4,964,362) in view of Clitheros et al (US 4,564,410). In Dominguez the rotation of the nozzle assembly is controlled by the controller 32 in communication with robot arm 30 and a nozzle 42 with discharge opening (64) having a first end portion preceding a second end portion. However, A discharge port of the nozzle formed into a profile in which the first end portion positioned at the front side is wider than the second end side positioned at the rear end side is not taught. Clitheros et al discloses (see Fig 6 and column 10, lines 30-47) a nozzle 16 having a discharge port in which the first end

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portion positioned at the front side is wider than the second end side positioned at the rear end side. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a discharge port of a nozzle having structure wherein the first end portion positioned at the front side is wider than the second end side in Dominguez to ensure adequate contact of the strip or bead of adhesive material with the bottom channel around the window opening as taught by Clitheros et al.

Allowable Subject Matter

10. Claims 6-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: prior art of record does not disclose or suggest, a material application apparatus for applying a material to a surface of a workpiece disposed on a base and a movement means for relatively moving the application means along a predetermined movement track on the surface so as to apply the material into a bead configuration comprising, among others, a discharge port of the nozzle is formed into an acute-angled triangle configuration having a base edge portion and a pair of side edge portions constituting two equilaterals longer than the base edge portion.


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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM-4: 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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